



Nike's Olympic Villages in Rio de Janeiro

Evaluation Proposal

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Professional Report
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I. Introduction

This professional report aims to provide details on the pre-baseline study carried out in collaboration with the UNDP's International Policy Centre for Inclusive Growth (IPC-IG) in Brazil. The study assesses the NIKE's project "Olympic Villages", implemented in partnership with the municipal government of Rio de Janeiro. Based on the study's recommendations, this report also proposes an end-of-project impact evaluation.

1.1 Context

The 2016 Olympic Games in Rio de Janeiro, Brazil brought the city of Rio and the entire country to the global stage. In the "Marvelous City", as Rio is known, spectators and television viewers worldwide witnessed all of its beauty but it also displayed the tremendous inequalities and violence found throughout the city. However, the 2016 Olympic Games also brought opportunities for development. One such project was spearheaded by the athletic sportswear company Nike. Nike's Department of Community Impact started to promote youth physical activity in Rio de Janeiro through a five-year investment in 22 community sports centers known as Olympic Villages (OV). Rio's Olympic Villages are public spaces in poor communities (*favelas*) that promote free sports and physical education to the residents. The Villages are spread throughout the city and located in disadvantaged areas characterized by high social vulnerability levels and low Human Development Indices (HDI)¹. Nike's intervention is based on expanding and improving the existing infrastructure public spaces that have been funded and managed by the municipal government of Rio since the 80s.

Nike's engagement with public-private partnerships started with the city of Rio in 2013 through programs that promote sports for children aged 6 to 12 years old. In 2016, the project Nike-Olympic Villages was implemented with the objective to create a "new

¹ According to Nike's background documents.

generation [of] physically active [children] and in love with sport that looks to Olympic Villages for physical activity and leisure”².

Part of the project involves a partnership with the U.N. Development Programme through the International Policy Centre for Inclusive Growth (IPC-IG) in Brazil to develop a pre-baseline assessment of the project. The IPC-IG carried out a study in July 2016 on the current information system used in the Olympic Villages and made recommendations to improve for the Monitoring and Evaluation System that could potentially inform future evaluations³. The findings were then shared with Nike’s staff and the representatives of the Rio de Janeiro municipal government (Department of Sport and Leisure)⁴. After the study, Nike expressed interest in implementing the program’s evaluation, conditional on strengthening dialogues between Rio, UNDP and municipal government officials.

This report aims to build on the pre-baseline study and proposes a discussion around options for an impact evaluation of the program to be developed by the IPC/UNDP within the next three and a half years. The report is organized in following sections: 1.2) Theoretical approach and evidence on social and sports programs in Brazil; II) Baseline study and main findings on the Monitoring System of the project; III) Proposal for an Impact Evaluation, that includes sample design, data sources and analysis for a mixed method approach, the strengths and limitations and, human resources, budget and timeline.

1.2 Theoretical background

The inclusion of sport and sports programming into the international development agenda has been gaining traction ever since the UN declared 2005 to be the “International Year of Sport and Physical Education⁵”. Recent academic literature has highlighted the potential of sports to contribute to social inclusion, increased educational outcomes and linkages with

² Ibid.

³ I participated as researcher assistant in the pre-baseline study while interning for IPC-IG, between June and July 2016.

⁴ More details of the study are shared in section 3 “Description of intervention”.

⁵ On 3 November 2003, the General Assembly decided to proclaim 2005 as the International Year for Sport and Physical Education, as a means to promote education, health, development and peace. Resolution A/RES/58/5 available at <http://www.unis.unvienna.org/pdf/ares585.pdf>

other development programs (Levermore and Beacom, 2009). Additionally, specific international and high-profile sporting events—such as the World Cup and Olympics—have gained attention due to issues related to displacement, investment and as a political platform for public expression (Darnell, 2012). But despite this rush of interest, there is a lack of evaluations on the intersection between sport-specific programming and development goals (Darnell and Black, 2011).

Impact evaluations of sports programs offered by schools or development initiatives in Brazil are nearly non-existent. The literature on physical educational programs focuses on qualitative assessments of social inclusion projects implemented by the local government or in partnership with different UN agencies. Souza et al (2012) analyzed local projects in Brazil that promoted sports and physical education for children in poor areas. Their results show that these initiatives contributed to the socialization of children and youth. More specifically, they noted that it offered an opportunity to teach children the importance of active citizenship and community values, in addition to providing a safe and free space for leisure. A few quantitative studies have focused on the development of motor skills of children participating in sports programs. Another study with Brazilian children found that students that participated in afterschool physical activities presented better motor skills in relation to those enrolled in regular school curriculum (Santos, Neto and Pimenta, 2013).

There is some related literature that can aid in sports programming evaluation. For example, the relationship between school attendance and other social programs has been well documented. There are a number of studies on the effect of Conditional Cash Transfers (CCTs) like Bolsa Familia in increasing school attendance and graduation rates among public school pupils. This contributes, therefore, to the development of human capital in both urban and rural areas (Cacciamali et al, 2010; Melo and Duarte, 2010; Oliveira and Soares, 2013).

The negative correlation between school attendance and poverty reduction and inequality in developing countries is also demonstrated in various studies. Scholars claim that programs designed to reinforce monitoring school attendance—such as conditionalities in CCTs—can have a positive impact on educational outcomes (Paiva, et al., 2016; Pellerano

and Barca, 2014). Others see an association between school feeding programs (Pontili and Kassouf, 2007) and programs designed to eradicate child labor (Soares et al, 2010) with higher school attendance and performance.

Given the literature above, the impact evaluation of Olympic Villages will not only inform Nike's management about the results of the project but it can also provide a significant opportunity to examine the potential effects of the project on attendance in afterschool sports programs designed to engage socio-economically disadvantaged children.

Furthermore, the results could contribute to the debate about the impacts of children's attendance on educational outcomes as an effective way of breaking the intergenerational transmission of poverty in marginalized communities.

II. Baseline study: main findings on the Monitoring System

2.1 Description of the intervention

Nike's Olympic Villages program builds on the existing public-private partnership with Rio's municipal government through the pilot project "Active Schools and Communities". Since 2013, Nike has been implementing a sports teaching methodology with children aged 6 to 12 years in poor communities of Rio (*favelas*). The rationale behind this project is to provide children with a positive experience through structured sports programming so that they are likely to improve school performance and stay off the streets (UNDP, 2016).

In 2016, Nike started the Olympic Village project in order to extend the concept of the previous pilot to all 22 Olympic Villages. The program consists of training teachers on sports curriculum that aim to improve the quality of classes⁶, and ultimately, the interest of students. Nike also provides equipment, such as materials and uniforms for teachers, and in some cases, it renovated entirely the Village Olympic facilities⁷.

⁶ The methodology is based on Nike's "7 Filters" that aims at engaging students by making classes more fun, recognizing children's strengths, connecting movement with content, providing time for children to play games, taking advantages of the physical space and working with a network of partners.

⁷ Investments are tiered in Tier Three (18 Villages) that receive the standard training and equipment, and Tier One Villages (4 Villages) that in addition to what is invested in Tier Three, a team of Nike's volunteer is available to assist teachers with classes. Structural improvements and site refurbishment are also made.

The training happens twice a year and all teachers are encouraged to participate in the immersive one or two-day course. Follow-up training by sports specialists is done on an informal basis but there are also established times for regular meetings throughout the year. There are around 700 teachers (both full and part-time) teaching sports to about 50,000 students, including youth, adults, senior citizens and people with disabilities (PWD). Beneficiaries have access to more than a hundred sports, leisure, and cultural activities across the 22 Villages.

It is important to note that the organizational structure is complex and hierarchical roles may vary across Villages. In general, the human resources are managed by contractors (civic organizations) and funded through the city's budget. In 2015, the Department of Sports and Education (SMEL) was the municipal government's arm for managing Nike's project, with financial support from the Department of Education. In November of 2016, municipal elections changed the city's political landscape and both departments were merged into the overarching Department of Education, Sports and Leisure (SMEEL). Within the Villages, the administrative team takes care of the monitoring system and manages operational activities while the technical team - composed of teachers - is responsible for teaching sports and overseeing students' attendance⁸. The training implemented by Nike with teachers is done through NGOs specialized in sports and development. Currently, the Institute Sport & Education (IEE in Portuguese) is contracted to work on a daily basis with all 22 Olympic Villages.

The rationale behind the project expects that training of teachers and new equipment will help the program achieve a set of specific objectives by the end of 2020:

1) Objective 1: Double the number of children served; 2) Objective 2: Balance the percentage of participating boys and girls aged under 17 years; 3) Objective 3: Increase the frequency of participation and the retention of children in the villages; 4) Objective 4: Increase the range of sports practiced by children; and 5) Objective 5: Increase the visibility of Olympic Villages in the community and in the city.

⁸ In addition, a multidisciplinary team, composed of a pedagogue, social worker and psychologist, provides support to children with special needs and vulnerable families.

The objectives 1 to 4 guided the pre-baseline assessment done by IPC/UNDP and can be used for future impact assessment. The causal chain that links activities to objectives is highlighted in log frame below⁹:

Objectives	Indicators (at the OV level)	Analysis/Frequency ¹⁰	Source	Additional information
General objective Create a new generation physically active and sports-loving children that make use of Rio de Janeiro's Olympic Villages	1. Numbers of children enrolled as students, by sex and age	Admin data/Annually	SMEEL	
	2. Number of people with disabilities registered as students, by age	Admin data/ 4-months	SMEEL	
	3. Number of teachers and volunteers trained by NIKE	Monitoring reports/6-months	NIKE	
	4. Number of sports events realized	Monitoring reports/6-months	NIKE	
Objective 1 Double the number of children served	1.1 Number and proportion of children enrolled as students, by sex and age groups	Enrollment data of OV/Annually	SMEEL	
	1.2. Enrollment rate, by 1000 people living in the community,	Enrollment data of OV and 2010 Demographic Census/ Annually	SMEEL and IBGE (Brazilian Institute of Geography	1.2.1 Calculate potential neighborhood demand for Olympic Villages

⁹ Based on the review of background documents.

¹⁰ Overall Risk Assessment: access to data depends upon availability for the requested period and institutional agreement.

	sex and age groups		and Statistics)	
Objective 2 Balance the percentage of participating boys and girls aged under 17 years	2.1. Number and proportion of girls and boys up to 17 years old enrolled as students	Enrollment data of OV/Annually	SMEEL	
	2.2. Sex ratio by age, with focus on groups up to 17 years old	Enrollment data of OV/Annually	SMEEL	
Objective 3 Increase the frequency of participation and the retention of children in the villages	3.1 Number and proportion of inscriptions, by sex and age groups	Admin data collected monthly/4-months	SMEEL	
	3.2. Inscription-enrollment rate, all ages	Enrollment data/ Annually	SMEEL	
	3.3. Inscription-enrollment rate, up to 17 years old	Enrollment data/ Annually	SMEEL	
	3.4 Number of children who attend class over a year	Enrollment data/ Annually	SMEEL	3.4.1. Analysis of retention of children in the villages based on attendance X enrollment data available at the individual level
	3.5. Number of services provided at the individual level (classes, events, meetings, etc.), by sex and age groups	Admin data collected monthly/4-months	SMEEL	3.5.1. Analysis of children average attendance at activities

Objective 4 Increase the range of sports practiced by children	4.1. Number of sports modalities offered on a regular basis	Admin data collected monthly with focus on schedule of classes/4-months	SMEEL	
	4.2. Number of classes	Admin data collected monthly with focus on schedule of classes/4-months	SMEEL	
	4.3. Number of classes with students aged up to 17 years old	Admin data collected monthly with focus on schedule of classes/4-months	SMEEL	
	4.4. Occupancy rate (number of available seats /number of enrolled students), per sport modality	Admin data collected monthly/4-months	SMEEL	4.4.1. Analysis of the most and least demanded activities at the OV
Objective 5 Increase the visibility of Olympic Villages in the community and in the city	5.1. Number of schools and local organizations within the Olympic Village's network	Admin data collected monthly with focus on school attendance/4-months	SMEEL	
	5.2. Number of public school students that are enrolled at the OV	Admin data collected monthly with focus on school attendance/4-months	SMEEL	
	5.3. Olympic Village students' level of satisfaction	Survey and focal group research with stakeholders and students /Annually		

2.2 Field work: qualitative and quantitative data collection

The pre-baseline study focused on a sample of four Olympic Villages¹¹ but provided a detailed description of the monitoring system utilized by all 22 Villages. The study analyzed qualitative and quantitative data in order to provide recommendations to improve data collection for the indicators aligned with objectives 1-4. If implemented, the improvements on the monitoring system will allow for evaluation studies to track and assess the program's progress. The findings summarized below were presented to the government, which is responsible for the monitoring systems of the Olympic Villages.

A team of ten people (including interns) spent three weeks in Rio de Janeiro between the months of June and July of 2016 to meet with stakeholders at the Olympic Villages sampled for the study, government of Rio de Janeiro, NIKE and NGOs. Around 50 interviews were conducted, transcribed and analyzed. In addition, information on demographics of students, administrative records and profile of children and families that attend classes at the Olympic Villages were collected.

The quantitative component compared databases for 2015 and 2016 years. It provided insights on the ratio of enrolments by age and sex, distribution of classes and teachers, as well the probability of entering or leaving activities for each of the analyzed Villages. Specifically, on the project's objectives, the study found that the average enrollment rate in each village should growth 14% a year in order to double the number of children enrolled. If infrastructure and number of teachers remain unchanged, however, the expansion of students over 5 years will exceed the Olympic Villages' carrying capacity, in particular those most sought-after regular activities.

Overall the Villages have a balanced sex-ratio among children aged 5-14, such age group also accounts for a large share of enrolments across activities (40-60%). The high concentration of women in the adult age groups, including senior citizens, has been observed possible due to the high number of unemployed or retired women. The low enrolment of adolescents and young adults, predominantly males, represents a source of

¹¹ The non-random selection of Villages was based on Nike's criteria of two villages from Tier one and two from Tier three.

concern given the high levels of violence and crime in the areas. The range of sports classes offered at the OV's is quite broad, ranging from 12 to 27 different modalities. However, enrolments were found to be heavily concentrated in a few, most popular modalities, such as swimming, soccer, dancing (jazz, hip hop and classic ballet) and martial arts.

The qualitative component aimed to understand the intricacies of the monitoring system at the Village and Government levels as well as shedding light on the main challenges to achieving the project's objectives. In relation to the NIKE's training, teachers appeared to appreciate the new methodologies, which can be applied in a wide range of sports even though they are not required to. One problem with the teachers is that a considerable fraction of them are hired under short-term contracts, which generates a high level of turnover within and between the Villages.

The study also identified barriers related to the participation of children in activities that could represent serious threats to the internal validity of the evaluation. The qualitative component was based on interviews with staff and participants and revealed that student enrollment and dropouts fluctuated. This is based on both internal and external factors. Among the internal factors were deteriorated facilities and a lack of qualified teachers. It is known that the same Villages implement other programs funded or managed by NGOs and/or international organizations. For example, the UN Women office in Brazil develops gender equality-based programming with several OV's. But it is unknown the extent to which these programs overlap with Nike's training program, which could potentially distort the results.

The socioeconomic inequality and risk of gang violence in the surrounding community have been pointed out as one of the main problems affecting the Olympic Villages activities. Although at different degrees, violence can be a significant barrier to increasing the participation rates of children and adults. Moreover, the context in which these children live should be further studied to understand whether family background, income, housing conditions, problems in school or other factors influence children's motivation to participate in the Olympic Village.

Since structural issues are beyond the scope of the program, it is believed that the training and equipment components are well designed to address the challenges at the Village level. The impact evaluation will, then, determine whether Nike's efforts, in partnership with the Villages, have been successful in increasing the number of enrolled students through the improvement of classes and infrastructure.

III. Proposal for an Impact Evaluation

The evaluation proposal focuses on measuring the desired outcomes of the Olympic Village project by asking: how and to what extent teacher training and donated materials improved the quality of sports classes offered in the Villages? The impact of the program will be captured through indicators based on the above mentioned objectives, as recommended by the pre-baseline study.

3.1 Counterfactual

The design of the project allows for quasi-experimental methods to assess the impact of Nike's investment on student attendance rates. While the baseline data and subsequent follow-up data collection are important to measure the progress of the project, they are not, however, enough to provide a robust estimate of the impact on attendance (counterfactual). Ideally, the counterfactual would be a situation in which the teachers and students in Olympic Villages that do not receive Nike's investment. Since the program is immediately available to all 22 participating Villages without a randomized assignment of the treatment (the training is universal and accessible to all teachers), the counterfactual will be estimated otherwise.

In order to estimate a valid counterfactual—the impact on attendance—we rely on two (strong) underlying assumptions: 1) most teachers in the OV receive Nike's training but a fraction of it actually applies the knowledge in their classes on a voluntary basis, and 2) those who apply the knowledge (after attending 100% of the course we also assume) are more likely to attract and retain more students, increasing therefore their attendance rates, in relation to teachers who do not apply the knowledge or do not receive training at all.

These assumptions, however, pose problems for the underlying model that will be tested. The first one is the selection bias associated with the teachers that participate voluntarily in the training. It is fair to say that motivated teachers are more eager to learn new methods and incorporate them into classes or are naturally more interested in improving classes through other means than their counterparts. Both behaviors would lead to positive outcomes in student attendance, making it difficult to isolate the program's effect. Another issue with the program's evaluation is the potential spillover effects that the training might have on those who are not trained. The content of the training, as well as the reflections of the teachers on improvements in their classes, might gradually influence those that did not get any training. There are basically two reasons for not receiving the training: teachers can refuse to participate in the course or they join the Village after the first round and have to wait until the next training cycle.

3.2A mixed methods approach

The lack of random assignment is the major weakness of the quasi-experimental study but causality can still be verified. The counterfactual exercise in this case will assess what would the student attendance rate be had they not been subject to the intervention (Nike's methodology). One approach is to construct a counterfactual that takes advantage of the high turnover of teachers. I will do this by selecting a control group that is made up of teachers hired after the training cycle took place. Because teachers are hired independently of their 'motivation to learn new methodologies', we can assume that there are no relevant differences among teachers other than the training status. On the other hand, the treatment group will be made only of teachers that apply the knowledge learned through trainings, reducing, therefore, the risks of selection bias. This way, it is safe to expect that there are no systematic differences among students who are enrolled in the Village other than taking classes with trained teachers. Monitoring data will be used to select the comparison and treatment groups (discussed below). This design increases the chances of estimating the impact that is based on observable variables thought to influence receiving the treatment and the outcome of interest.

There have been a number of recent initiatives to promote a more systematic integration of quantitative and qualitative approaches to evaluate program/policy interventions, particularly to establish causal analysis of poverty (Shaffer, 2013). In combination with approach one or two, a qualitative component will expand on the quantitative results and provide additional insights to the study. It will help explain why the students with higher attendance rates continue to attend sports classes at the Village, as well as why the dropouts lose interest in the activities. In addition, a focus groups approach with students from different ages may capture other factors not included in the quantitative analysis. The results can inform donors and partners in order to make decisions around adjustments on the program or intended goals.

3.3 Sample design

The sample design for the impact evaluation should observe an important distinction among the Olympic Villages. Although the Villages were designed to serve poor and extreme poor populations, some of them are located in neighborhood that have undergone considerable social and economic progress over the last two decades. The ‘upgrade’ of certain communities from poor to lower middle class may reflect differences among households, thus, differences in the behavior of the participants of Villages hosted in these areas.

In order to correct for potential biases and avoid undermining the validity of the test, measures of social economic development will be used. Some examples include median income, the Human Development Index organized by subunit of Rio’s metropolitan area or poverty levels. These can be used to restrict the sample to Villages that share common socioeconomic characteristics. After a study of the sampling distribution, parameters and necessary power analysis, the size of the sample can be determined along with a number of observations to credibly measure the impact of the program.

For the sample of the qualitative component, a first option would be to include at least two children from each Village with ages between 6 and 12. The focus group discussions will take place twice, at the mid-term evaluation and at the end and final evaluation. Each focus group will gather around 22 representatives from the higher and lower end of the

attendance distribution. The focus group study should be based on the program's outcomes and further detailed by the hired staff.

The second option is a reduced version of the first focus group sample. This will reduce costs and time but concentrate efforts on the evaluation questions of the end term. In this case, a purposive sample of five Villages can be selected based on criteria such as size of the Village, range of sports offered, percentage of teachers trained, level of poverty or vulnerability of the community and level of investment received by Nike. The representatives of the selected Villages are also children but at wider range of ages—from 6 to 17 years old—assuming that the project will take four years long.

3.4 Five data sources

The relationship between treatment and the outcome of interest will be tested using two of the program's administrative data. The monitoring reports elaborated by the staff at the Olympic Villages and compiled by the city's Department of Education, Sports and Leisure (SMEEL) are important sources of information on the participation of children and workload of teachers. A formal agreement on the confidentiality of data would expand the access of data for all 22 Olympic Villages.

Triennial reports (elaborated every 4 months) provide data on the Olympic Villages current activities. It has aggregate data on registrations, number of students per class, by sex and age, numbers and type of classes offered, teachers' activities and other managerial data. The Annual Enrollment Report provides individual and identified data on the first enrollment and the re-enrollment of students. Both sources of data can be used for the measurement of children's attendance rate.

Monitoring data collected by the staff of Nike in charge of training of teachers and follow-up meetings will be the principal source of data on the treatment. A database of trained teachers, in addition to the indicators that measure how well the teachers incorporate the new curriculum, will feed the program's monitoring data on the treatment.

An external source of data like the Brazilian national census and the school census will provide information on relevant variables for the evaluation. The census provides data on

population, education, health among others for neighborhoods of large cities like Rio de Janeiro. The database can be used to cross-check the sample design for quantitative and qualitative analysis, since the names of neighborhood match the locations of the Olympic Villages. The 'Attendance Project' (*Projeto Presença*) is a database on school attendance managed by the Ministry of Education and updated annually at the municipal level. It brings information on children (identified) currently enrolled in elementary school in both public and private institutions. From the database, it is possible to know the percentage of students whose families are on welfare programs, like the CTT Bolsa Familia, that target extreme poor and poor families in Brazil. Although limited, this is the closest socio-economic data for schools we can get and can serve as an indicator of poor families and students living in the surrounding communities of the Olympic Villages. Data is aggregated at the school level and provides attendance rates for almost 80% of students registered in the Bolsa Familia program¹².

3.5 Data analysis plan

The first approach of the quantitative analysis will use a linear relationship with attendance rates as the dependent variable and a vector of independent variables, including whether teachers participate or not in the training and if they are incorporating the new methodology. The model may also include indicators on socio-economic status of the surrounding community in order to control for confounding variables. As discussed above, the context of the neighborhood where the Villages is located also affects the regular activities. The model is displayed as:

$$Y_{kt}(\text{attendance_rates}) = \beta_0 + \beta_1(\text{Teacher_Knowledge}_{it}) + \beta_2\text{Student}_{it} + \beta_3\text{Village} + \beta_4\text{Community}_{it} + \varepsilon$$

where $Y(\text{attendance rates})$ is the difference between the enrollment and dropout dates, which accounts for total participation of children in sports classes at year t and Olympic Village k and measured through Objective 3; β_1 is the coefficient that combines two

¹² This accounts for more than 10 million children in approximately 99,73% of Brazilian municipalities, according to the country's Federal Service of Data Processing (SERPRO): http://www4.serpro.gov.br/noticias-antigas/noticias-2006/20060405_04/

dummies: the training status for teacher i (1=if participate, 0 = otherwise/control) and whether they have applied the knowledge in classes (1=if yes, 0 = otherwise) at year t ; β_2 accounts for the students' characteristics such as age, sex and number of classes he or she is enrolled in; and β_3 is the estimate of the Village's current capacity, that takes into consideration ratio of enrolments, registrations, number of classes and teachers (Objective 1); β_4 is an indicator variable for communities considered poor and vulnerable.

The coefficient β_1 is the estimated impact of treatment on the outcome of interest. β_2 also allows to test for the program's objectives on enrollment by age, sex and modalities (Objectives 2 and 4). The model could be strengthened if other variables of interest are included in order to control for characteristics of the Olympic Village that may influence attendance rates such as size (total area), population served, range of sports classes available, infra-structure adapted to different audiences (young children or students with disabilities), whether the facilities were renovated or not, among others. These controls might reduce the risks of obtaining biased estimate when comparing treatment and control means.

The analysis of the qualitative component will help categorize and connect aspects that are overlooked in the quantitative analysis. Discussions obtained from focus groups will be systematically coded based on key word or concepts that emerge from the data. The interpretation will look for patterns in selected comments and responses that link the perception of children on the quality of classes, teachers' skills or availability of equipment to their motivation to attend activities regularly. Children's responses will also provide a tool to triangulate the findings from the regression analysis.

3.6 Overview of strengths and limitations

The limits of this impact evaluation proposal lie in the details of the program and its approaches. As discussed earlier, the nature of the treatment, available data and data analysis of the study may pose potential threats to internal validity of the study. Firstly, the lack of randomized assignment makes it hard to separate the intervention effect from other effects. The training of teachers is offered in a universal basis but with imperfect compliance. Secondly, the counterfactual approach has been designed based on the

incompliance rates and does not guarantee that the observations in the comparison group will not be affected by spillover effects from the treatment group or other programs in place. Thirdly, the context in which the Villages are inserted is also an issue, both in terms of challenges faced by a lack of funds to provide high quality service and the hazards experienced by poor residents. This accounts for most of the heterogeneity that the model attempts to address. Finally, the evaluation has been design to verify whether or not Nike's intervention has motivated more children to attend school in the Village. However, it does not cover the long-term effects of this particular sports program or the behavioral/physical changes among children. These aspects could potentially be linked to the social inclusion and development goals of Olympic Villages and help inform other public policies aimed at reducing poverty.

It is also important to note that the impact evaluation has also limitations in terms of external validity. While the sample of children served in the Olympic Villages is considerably large and may represent the population living in poor communities, the conclusions are limited to Rio's particular urban context and around this specific event. Additionally, the study, like other impact evaluations, is best at testing the underlying theories and establishing the causal relationships at given circumstances, therefore, the results may not be valid on similar programs or contexts.

3.7 Human resources, budget and timeline of activities

Assuming that monitoring data will be collected by Nike's training team and the Olympic Villages' staff, a team of four people hired by the IPC/UNDP will be necessary to carry the impact evaluation. More specifically, a research coordinator, one researcher and two researcher assistants will work on: 1) the logistic of the access to data of the 22 Villages, 2) assessment of the quality of the data, 3) adjustment and correction of the data base, 4) transferring the database to the Stata software, 5) programming the software to run the necessary statistics, 6) calculation of the indicators, 7) Focus groups preparation and implementation, 8) analysis and writing of reports.

One half-time consultant resident in Rio de Janeiro will be hired to facilitate the access to the database, communicating with the Villages and the City Hall on a regular basis. This is

the key. Other members of the IPC/UNDP staff will be working on operational and communication procedures.

The table below displays the detail budget for the 2017-2020 period:

Item	Person/Months	Unit	Total Cost in USD
Coordination (50% time)	24	1,700	40,800
Researcher	48	1,500	72,000
Research Assistant 1	48	1,000	48,000
Research Assistant 1	48	1,000	48,000
Consultant (Rio)	42	700	29,400
Air Ticket	40	200	8,000
DSA+ Terminal expenses	40	215	8,600
Operations	24	200	4,800
Communications	24	200	4,800
Supplies	48	25	1,200
Total*			265,600

* overhead fees not included

The table below shows the timeline of planned activities for 2017 (Year 1), 2018 (Year2) and 2020 (Year 3):

YEAR ONE: Baseline													
ACTIVITY	RELATED OBJECTIVE(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Treatment	Immersive course on Nike's methods and follow-up meetings		training	X	X	X	X	X	X	training	X	X	X
Data collection	Train NIKE instructors on M&E activities						X	X	X		X	X	X
Analysis	Descriptive analysis										X	X	

Baseline report	Summarize data and descriptive context of the program												X
YEAR TWO: Treatment and Control groups													
ACTIVITY	RELATED OBJECTIVE(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Treatment	Immersive course on Nike's methods and follow-up meetings		training	X	X	X	X	X	X	training	X	X	X
Data Collection	TREATMENT and CONTROL			X	X	X	X	X	X	X	X	X	X
Focus Groups	TREATMENT and CONTROL: gather information about participants' perspectives and opinions.			X	X								
Analysis	To compile data and interview information									X	X		
Mid-term Evaluation Report	Performance assessment											X	X
YEAR THREE: Endline													
ACTIVITY	RELATED OBJECTIVE(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Treatment	Immersive course on Nike's methods and follow-up meetings		training	X	X	X	X	X	X	training	X	X	X
Data collection	At Program and Village levels			X	X	X	X	X	X		X	X	X
Focus Groups	Discussion on outcomes of interest							X	X				
Analysis of results	Quantitative and Qualitative components									X	X	X	
Reporting Plan for year 3	1. Executive Summary 2. Final Report												X X

IV. References

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